
NOTE ON FM CAMOUFLAGE SERIES

FM 5-20, Camouflage, dealing with basic principles, and FM 5-20A, Camouflage of Individuals and Infantry Weapons, have been assigned a broad distribution designed to reach all arms and services. Other Field Manuals (see list below) are to have selective distributions to arms and services primarily interested and to higher headquarters of all arms and services. See FM 21-6 for the specific distribution of each.

FM 5-20	Camouflage, Basic Principles
FM 5-20A	Camouflage of Individuals and Infantry Weapons
FM 5-20B	Camouflage of Vehicles
FM 5-20C	Camouflage of Bivouacs, Command Posts, Supply Points, and Medical Installations
FM 5-20D	Camouflage of Field Artillery
FM 5-20E	Camouflage of Aircraft on the Ground and Airdromes
FM 5-20F	Camouflage of Antiaircraft Artillery
FM 5-20G	Camouflage of Rear Areas and Fixed Fortifications
FM 5-20H	Camouflage Materials and Manufacturing Techniques

WAR DEPARTMENT FIELD MANUAL

FM 5-20

This manual and FM 5-20 A through H supersede FM 5-20, 1 June 1940

CORPS OF ENGINEERS

CAMOUFLAGE, BASIC PRINCIPLES



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FM 5-20, Corps of Engineers Field Manual, Camouflage, Basic Principles, is published for the information and guidance of all concerned.

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BY ORDER OF THE SECRETARY OF WAR:

G. C. MARSHALL,
Chief of Staff.

OFFICIAL:

J. A. ULIO,
*Major General,
The Adjutant General.*

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SECTION II. USE OF ARTIFICIAL MATERIALS

15. ISSUED MATERIALS.—Camouflage materials issued include shrimp nets, twine nets, chicken-wire netting, cloth garnishing, steel- and glass-wool garnishing, smooth soft steel or iron wire, rope, wood and steel stakes and posts. For complete details see FM 5-20H and Engineer Supply Catalog.

16. PURPOSE OF CAMOUFLAGE NETS.—A garnished camouflage net, either twine or wire mesh, is supported on a wire frame to make a flat-top. Erected over an object, it conceals the object by breaking up its form and shadow. The garnishing in the net blends with the surroundings so the net itself cannot be seen. Twine camou-

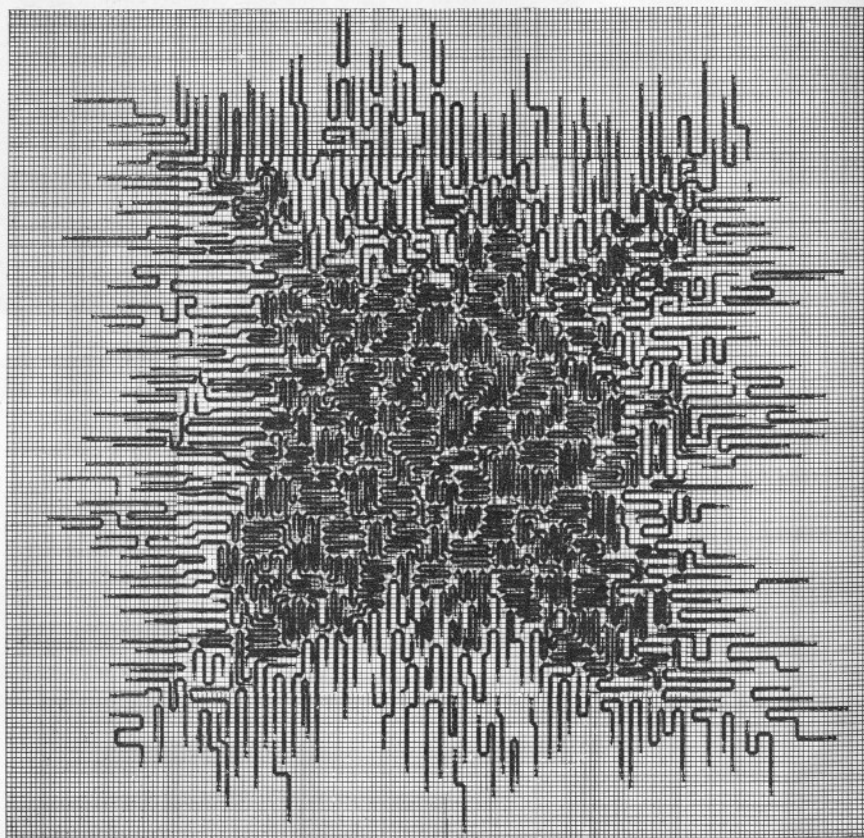


FIGURE 45.—Net with standard arrangement of garnishing patterns.



FIGURE 46.—Hanging net vertically facilitates garnishing.

flage nets are also used as drapes for the same purpose. A drape is supported above an object by poles.

17. GARNISHING FOR FLAT-TOPS.—*a.* Garnishing material is woven or tied to nets and netting. The standard arrangement of patterns can be used effectively wherever there is a naturally rough ground texture. For other types of terrain, special arrangements should be used. For pattern arrangement on drapes, see paragraph 20.

b. The standard arrangement is irregular in outline (fig. 45). Approximately 80% of the center area of the net is covered. Toward the edges, the garnishing is thinned to approximately 10% coverage. For estimating purposes, total area of garnishing is about 55% of the area of the net. Thinning the amount of garnishing at the edges is important, because it serves to blend the screen with its surroundings and prevent conspicuous straight-edged shadows. Particular care must be taken to keep thick garnishing away from the corners.

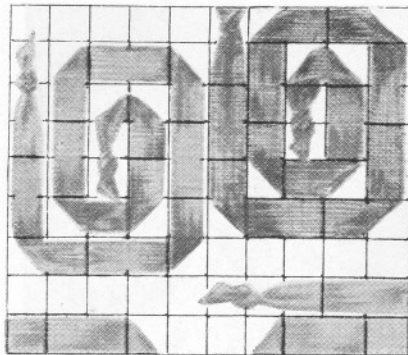
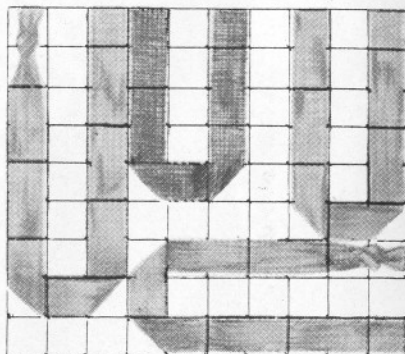


FIGURE 47 ①. — Greek-key pattern for strip garnishing. Pattern is woven parallel to edges of net.



②. — U pattern for strip garnishing. At edges of pattern arrangement, open ends of U-form are made to point towards nearest edge of net.

18. APPLICATION OF GARNISHING.—Nets are easily garnished when hanging vertically (fig. 46). The most difficult position is when they are attached to an overhead frame. Tests have shown that there is little difference in effectiveness between the many garnishing patterns. Two patterns, known as the Greek-key pattern and the U pattern, have certain advantages. They save time, are easily applied, and the basic design is easy to control; together, they achieve the desired irregularity and blending effect.

a. *Greek-key pattern* (fig. 47 ①).—Strips of garnishing are woven parallel to the sides of the net in a "squared spiral" or fret-work design.

b. *U pattern* (fig. 47 ②).—Each strip of garnishing is woven in U-shape. The pattern is made irregular. Near the edges of the net, the strips are woven so that both ends, still following the U-form, point toward the nearest edge of the net.

c. *Special patterns*.—Properly colored straight-line garnishing (fig. 48) is particularly useful in barren terrain and areas of smooth uniform texture. In broken, mottled terrain, patch garnishing may be used to match the terrain pattern. Patch garnishing is illustrated in figure 49. Bow-tie garnishing (fig. 50) is useful in matching thick, leafy texture.

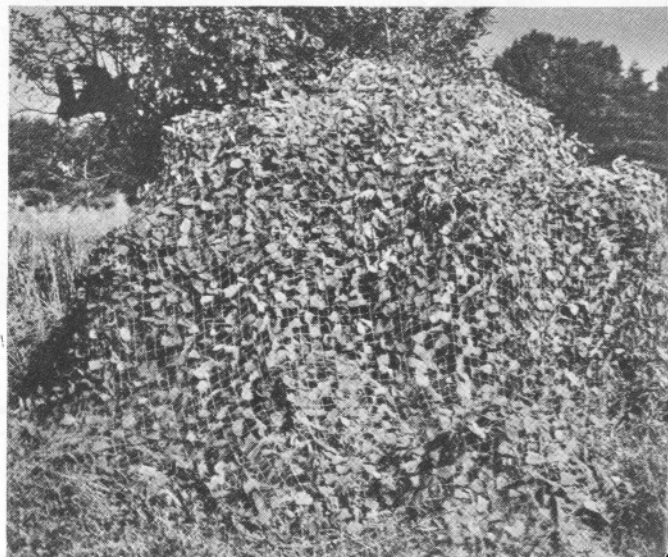
FIGURE 48.—In correct color proportions, straight line garnishing disguises a headquarters tent in open terrain.



FIGURE 49.—Patch garnishing. Bunching material deepens texture.



FIGURE 50.—Bow-tie garnished drape does a complete job of matching thick leafy background.



19. MATERIAL AND LABOR REQUIREMENTS — FLAT-TOPS. — The following table gives the approximate amount of materials and man-hours required to garnish the different-sized twine nets when they are to be used as flat-tops.

TABLE I.—Approximate material and man-hours required to garnish nets.

Size	Garnishing Strips 2" x 60"	Material Required— No. Rolls 2" x 300'	Man-hours Required to Garnish
15' x 15'	125-150	2-3	3
14' x 29'	220-300	4-5	8
17' x 35'	325-450	6-8	11
29' x 29'	425-600	7-10	16
36' x 44'	775-1,150	13-20	30

20. GARNISHING FOR DRAPES.—When twine nets are garnished to be used as drapes, garnishing is carried completely out to the edge of the net and thinned to approximately 50 percent of the outer area covered, so that the total covered area of the net is about 65 percent, instead of 55 percent. For this use, the table above should be revised by adding one-sixth or 17 percent to the materials and man-hours required.

21. COLOR PERCENTAGES FOR GARNISHING. — When artificial materials are used, color patterns may be sprayed on to match the surroundings. Precolored cloth can be selected to match. The following table gives the color percentages necessary in garnishing for various kinds of terrain.

TABLE II. — Color percentages for garnishing with artificial materials.

Tropical and Summer, Temperate	Winter, Temperate	Desert or Arid Areas
70%—dark green 15%—light green 15%—field drab	60%—earth brown 30%—olive drab 10%—earth red	70%—sand 15%—earth yellow 15%—earth red

These percentages must be changed as necessary to conform to local coloration.

SECTION III. DRAPES, FLAT-TOPS, AND SCREENS

22. DRAPES.—Standard drapes are either shrimp nets, ungarnished, or twine nets, garnished. Drapes are commonly used over vehicles, planes, structures, and equipment which must be camouflaged quickly with little labor. To be effective, drapes must be associated with natural ground patterns.

a. *Application of drapes.*—The drape is held away from the object by supports (fig. 51) so it does not reveal the outline of the object, but presents an irregular form. It is drawn out and staked to the ground; or the edges may be thrown over low bushes, or held down by weights. Eight to twelve stakes are required for each large net. Four to six are sufficient for 15- by 15-foot and 29- by 29-foot nets. If available, some natural materials from the immediate vicinity are added to give improved blending qualities to the drape.

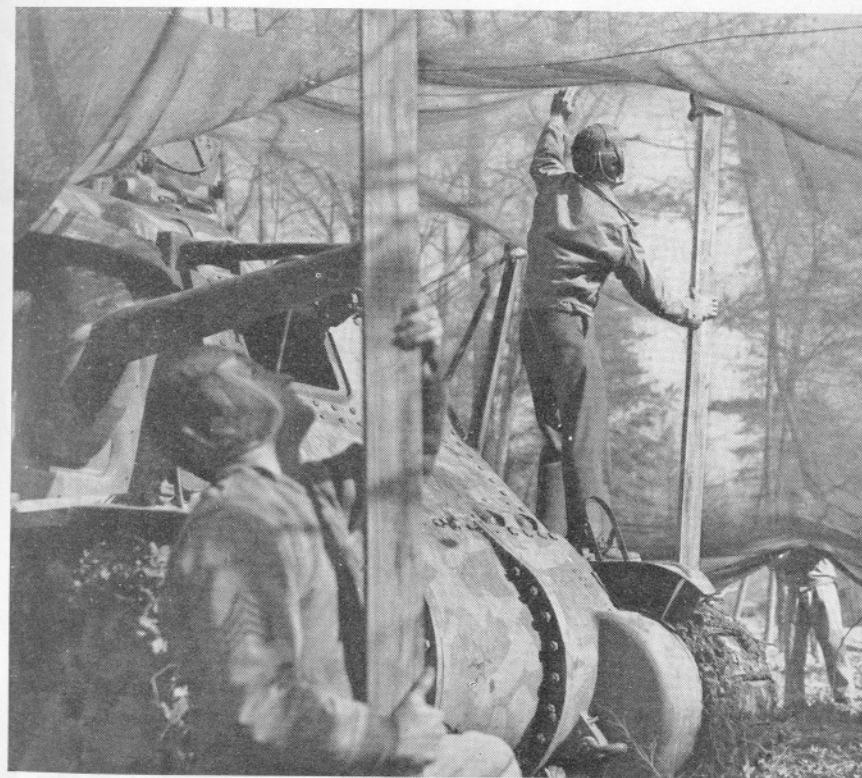


FIGURE 51.—Drapes must be held above and away from the object by props to make the shape of the installation irregular and to conceal identity of object.